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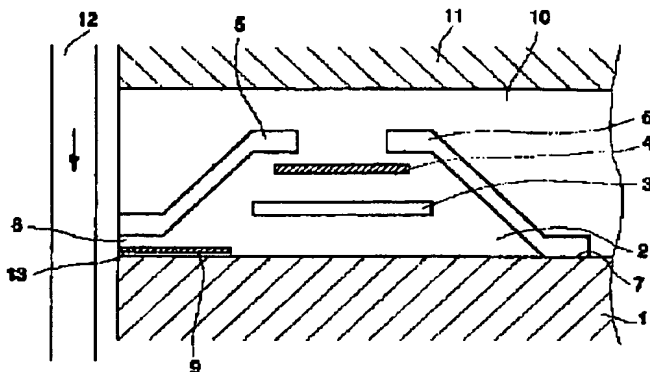
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TITLE : COMPOSITE TYPE THIN-FILM
MAGNETIC HEAD



ABSTRACT : PURPOSE: To decrease the packaging space of the yoke type magneto-resistance effect type head by providing a 2nd magneto-resistance effect element near an upper or lower yoke and detecting signal magnetic fields with the upper or lower yoke as a magnetic shielding body.

CONSTITUTION: A substrate 1 in common use as the lower yoke consists of a high permeability magnetic material, such as Ni-Zn ferrite. The 2nd MR element 9, a bias conductor 3 and the 1st MR element 4 are laminated via plural insulating layers on the substrate 1. The insulating layers consist of SiO₂, etc., and are formed by a sputtering method. The MR element 9 is formed by patterning after the film of 'PermalloyR' is formed by a vapor deposition method or sputtering method. The magnet fluxes of the analog signal magnetic fields from a magnetic recording medium 12 are introduced via a head gap 6 and an upper yoke 5 to the MR element 4. On the other hand, the head gap 13 between the MR element 9 and the substrate 1 is $\leq 0.3\mu\text{m}$ and digital signals of $\leq 0.3\mu\text{m}$ recording wavelength are outputted from the MR element 9 via a gap 13.

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